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“Step Out From the Old to the New”

IS 4339 (1997): Household Sewing Machines – Needle Bar Link Studs [MED 29: Sewing Machines]

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( पहला पुनरीक्षण )

*Indian Standard*

HOUSEHOLD SEWING MACHINES —  
NEEDLE BAR LINK STUDS —  
SPECIFICATION

( *First Revision* )

ICS 61.080

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BUREAU OF INDIAN STANDARDS  
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## FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards after, the draft finalized by the Sewing Machines Sectional Committee had been approved by the Light Mechanical Engineering Division Council.

This standard was originally published in 1967. Its first revision has been undertaken to include additional details regarding material, hardness and packing along with Amendment No. 1.

For general requirements of sewing machines IS 1610 'Household sewing machines — General requirement (*second revision*)', may be referred. A list of Indian Standards on household sewing machines and their components is given in Annex B.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

## *Indian Standard*

# HOUSEHOLD SEWING MACHINES — NEEDLE BAR LINK STUDS — SPECIFICATION

*(First Revision)*

## 1 SCOPE

This standard specifies the requirements for needle bar link studs for sewing machines for household purposes.

## 2 REFERENCES

The following Indian Standards contain provisions which through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	Title
1501 (Part 1) : 1984	Method for vickers hardness test for metallic materials: Part 1 HV 5 to HV 100 ( <i>second revision</i> )
2500 (Part 1) : 1992	Sampling inspection procedure: Part 1 Attribute sampling plans indexed by acceptance quality level (AQL) for lot by lot inspection ( <i>second revision</i> )
4432 : 1988	Case hardening steel ( <i>first revision</i> )
4905 : 1968	Methods for random sampling.

## 3 NOMENCLATURE

The nomenclature of the needle bar link studs shall be as indicated in Fig. 1.

## 4 TYPES

The needle bar link studs shall be either Type A or Type B.

## 5 MATERIAL

Needle bar link studs shall be manufactured from any suitable case hardening steel (*see IS 4432*).

## 6 HARDNESS

The bearing diameter of the needle bar link studs shall be case hardened to a depth of 0.5 mm to attain hardness value of 550 HV [*see IS 1501 (Part 1)*]

## 7 DIMENSIONS AND TOLERANCES

The main dimensions and tolerances shall be as shown in Fig. 2 and Fig. 3.

## 8 WORKMANSHIP AND FINISH

The needle bar link studs shall be well finished all over and shall be free from defects such as flaws, burrs, cracks and rust.

## 9 SAMPLING

Unless otherwise agreed to between the purchaser and the supplier the sampling plan as given in Annex A shall be followed. For further information reference may be made to IS 2500 (Part 1) and IS 4905.

## 10 MARKING

**10.1** Each piece of the needle bar link stud shall be legibly and indelibly marked with the following:

- a) Source of manufacture and trade-mark, if any ; and
- b) Type of oscillating shaft

### 10.2 BIS Certification Marking

The product may also be marked with the Standard Mark.

**10.2.1** The use of the Standard Mark is governed by the provision of *Bureau of Indian Standards Act, 1986* and the Rules and Regulation made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

## 11 PACKING

Each needle bar link stud shall be given suitable anti-rust coating and wrapped in polyethylene bags. The wrapped needle bar link stud shall be securely packed in accordance with the best prevalent trade practice. Each package shall bear address of the source of manufacture, type and description of contents.

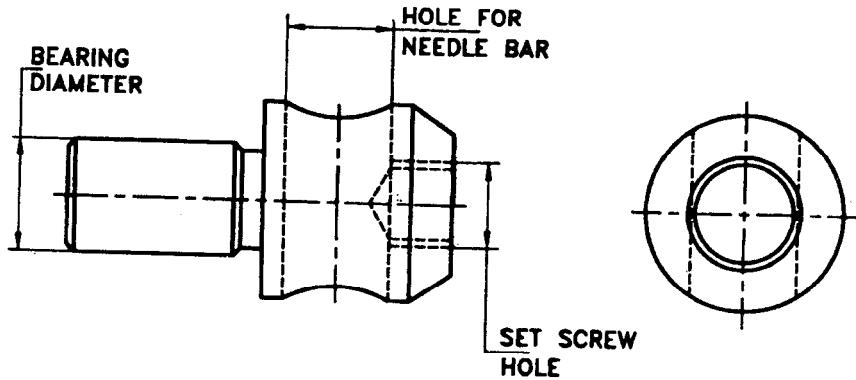
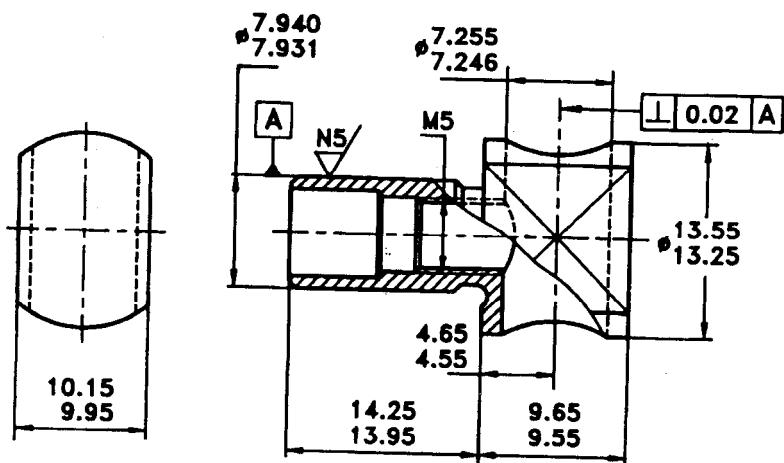
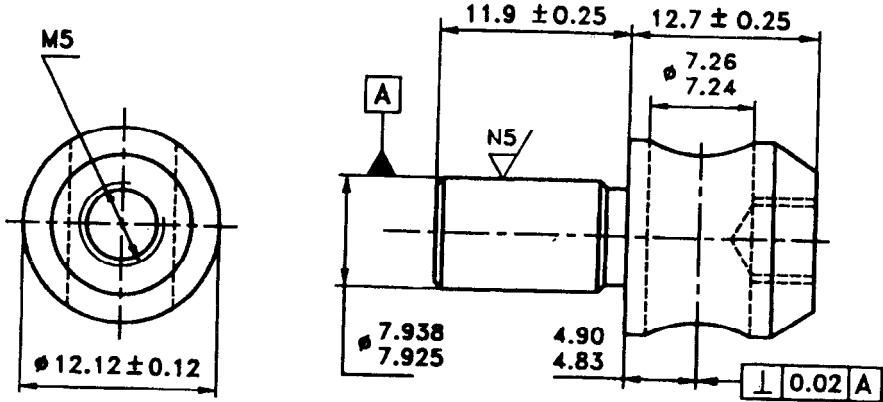


FIG. 1 NOMENCLATURE OF NEEDLE BAR LINK STUD



All dimensions in millimetres.

FIG. 2 DIMENSIONS FOR NEEDLE BAR LINK STUDS — TYPE A



All dimensions in millimetres.

FIG. 3 DIMENSIONS FOR NEEDLE BAR LINK STUDS — TYPE B

**ANNEX A**  
**(Clause 9)**  
**SCALE OF SAMPLING AND CRITERIA FOR CONFORMITY**

**A-1 SCALE OF SAMPLING**

**A-1.1 Lot**

In any consignment, all the needle bar link studs of the same type and manufactured from the same material under essentially similar conditions of manufacture shall be grouped together to constitute a lot.

**A-1.2** For ascertaining the conformity of the lot to the requirements of the specification, tests shall be carried out for each lot separately. The number of needle bar link studs to be selected at random for this purpose shall be in accordance with col 1 and 2 of Table 1.

**A-1.3** If the needle bar link studs are packed individually, in order to ensure the randomness of selection, random number tables shall be used. In case such tables are not available, the following procedure may be adopted:

'Starting from any needle bar link stud in the lot, count them in one order as 1, 2, 3,.....up to  $r$  and so on, where  $r$  is the integral part of  $N/n$  ( $N$  being the lot size and  $n$  the sample size). Each needle bar link stud thus counted shall be selected to constitute the sample.'

**A-1.4** If the needle bar link studs are packed in different cartons, a suitable number of cartons (not less than 20 percent of the total in the lot subject to a minimum of 2) shall be chosen at random. From each of the cartons so chosen, an approximately equal number of needle bar link studs shall be picked up from its different parts so as to obtain the required number of needle bar link studs specified in col 1 and 2 of Table 1.

**A-2 NUMBER OF TESTS AND CRITERIA FOR CONFORMITY**

**A-2.1** The needle bar link studs selected according to A-1.2 and A-1.3 or A-1.4 shall be examined for

**Table 1 Scale of Sampling and Permissible Number of Defects**  
*(Clauses A-1.2, A-1.4, A-2.1 and A-2.2)*

No. of Needle Bar Link Studs in the Lot	For Dimensions, Tolerances, Workmanship and Finish		Sample Size for Hardness
	Sample Size	Permissible No. of Defectives*	
<i>N</i>	<i>n</i>		
(1)	(2)	(3)	(4)
Up to 15	5	0	2
16 " 40	8	0	3
41 " 110	13	0	3
111 " 300	20	1	5
301 " 500	32	1	6
501 " 800	50	2	8
801 " 1 300	80	3	10
1 301 and above	125	5	15

\*This ensures that lots containing one and a half percent or less defectives will be accepted most of the time.

dimensions and tolerances (see 7) and workmanship and finish (see 8). If the number of needle bar link studs failing to meet one or more of the requirements mentioned above is less than or equal to the permissible number of defectives given in col 3 of Table 1, the lot shall be declared as conforming to the requirements of these characteristics.

**A-2.2** In the case of those lots which have been found satisfactory according to A-2.1, a number of needle bar link studs equal to the sample size indicated in col 4 of Table 1, shall be subjected to hardness test (see 6). Any needle bar link stud failing to meet the requirement for hardness shall be considered to be defective.

**A-2.2.1** If no defectives are found among the needle bar link studs subjected to the hardness test (see A-2.2), the lot shall be declared as conforming to the requirements of the specification, otherwise not.

## ANNEX B

## (Foreword)

## LIST OF INDIAN STANDARDS ON SEWING MACHINES

IS No.	Title	IS No.	Title
1294 : 1989	Bobbins for sewing machines for household purposes ( <i>third revision</i> )	4342 : 1967	Square slider for oscillating rock shaft for sewing machines for household purposes
1295 : 1990	Household sewing machines — Needle bar — Specification ( <i>second revision</i> )	4632 : 1968	Square slider for stitch regulator shaft for sewing machines for household purposes
1297 : 1991	Household sewing machines — Presser bar — Specification ( <i>third revision</i> )	4735 : 1968	Arm shaft cams for sewing machines for household purposes
1610 : 1989	Household sewing machines — General requirements ( <i>second revision</i> )	5740 : 1996	Household sewing machines — Memorandum of screw threads for sewing machine components ( <i>first revision</i> )
2181 : 1973	Household sewing machine needles ( <i>first revision</i> )	6903 : 1973	Glossary of terms relating to sewing machines for household purposes
3290 : 1994	Household sewing machines — Thread take-up lever sub-assembly for cam type sewing machines — Specification ( <i>third revision</i> )	7491 : 1989	Sewing machines, household — Accuracy requirements ( <i>first revision</i> )
3291 : 1968	Thread take-up cams for sewing machines for household purposes ( <i>first revision</i> )	7492 : 1989	Sewing machines, household — Sewing requirements ( <i>first revision</i> )
3299 : 1969	Oscillating rock shafts for sewing machines for household purposes ( <i>first revision</i> )	7493 : 1989	Sewing machines, household — Durability requirements ( <i>first revision</i> )
3375 : 1991	Household sewing machines — Bobbin case — Specification	9874 : 1981	Arm and bed assembly for sewing machines for household purposes
3816 : 1966	Connecting rods for sewing machines for household purposes	10304 : 1982	Feed rock shaft for sewing machines for household purposes
3817 : 1991	Household sewing machines — Arms shaft — Specification ( <i>first revision</i> )	10305 : 1982	Feed rock shaft crank for sewing machine for household purposes
3868 : 1966	Feed lifting rock shaft for sewing machines for household purposes	10306 : 1982	Feed lifting rock shaft crank for sewing machines for household purposes
4181 : 1967	Feed fork for sewing machines for household purposes	11280 : 1985	Household sewing machines — Feed bar — Specification ( <i>first revision</i> )
4188 : 1996	Household sewing machines — Oscillating shaft — Specification ( <i>first revision</i> )	11345 : 1985	Oscillating shaft crank for sewing machines for household purposes
4338 : 1991	Household sewing machines — Vertical oscillating shuttle — Specification ( <i>second revision</i> )	11347 : 1995	Household sewing machines — Shuttle driver — Specification ( <i>first revision</i> )
4339 : 1996	Household sewing machines — Needle bar link studs — Specification ( <i>first revision</i> )	12058 : 1987	Slide plates for sewing machines for household purposes
4340 : 1967	Needle bar link for sewing machines for household purposes	12740 : 1989	Household sewing machines — Stand — Specification
4341 : 1996	Household sewing machines — Feed bar rollers and studs — Specification ( <i>first revision</i> )	12789 : 1989	Household sewing machines — Table and Base
		12798 : 1989	Household sewing machines — Fly wheels — Specification

<i>IS No.</i>	<i>Title</i>	<i>IS No.</i>	<i>Title</i>
13120 : 1991	Household sewing machines — Flywheel bush — Specification	13872 : 1993	Household sewing machine — Stitch regulator — Specification
13192 : 1991	Household sewing machines — Hand attachment assembly	13972 : 1994	Household sewing machine — Bobbin winder assembly — Specification
13806 : 1993	Household sewing machine — Closed type shuttle race assembly — Specification	14207 : 1995	Household sewing machine — Open type shuttle race sub-assembly — Specification
13825 : 1993	Household sewing machine — Arm shaft front bush — Specification		

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### Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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